

## Overall Information

*Table1- Overall Information*

Vehicle plate number	85182
CPK data logger number	LN: 001502, DN: 1999
Bus line	Number 10 (south to north Bus line)
Bus Terminals	Azadi square - Daneshgah square
Total path distance	10.7 km
DPF producer company	Tehag_01 (Catalyzed DPF)
Installation date	24/Sep/2015
Report period	01/Mar/2016 – 15/Mar/2016 (fifteen days)
K value - DPF upstream	1.80 [1/m]
K value – DPF downstream	0.04 [1/m]

*Table 2- DPF Maintenance History*

Filter maintenance date	Filter have been working from installation date without any cleaning.
Dosing status	This system doesn't use additive.

*Table 3- Fuel and Additive Consumption Information*

Bus mileage (from DPF installation date)	8341 km
Bus mileage over the period	352 km
Working days over the period	8 days
Stop days	7 days
Data logger working days	8 days
Working hours over the period	69 hours 7 minutes
Average working hours per day (including stop days)	4 hours 36 minutes
Bus average speed	5.1 km/hr
idle speed time to all working time ration	81.49 %
Total Bus fuel consumption over the period	253 lit
Fuel consumption per hour	3.6 lit/hr
Average fuel consumption	0.72 lit/km

## Temperature, Pressure and Engine Speed Overview

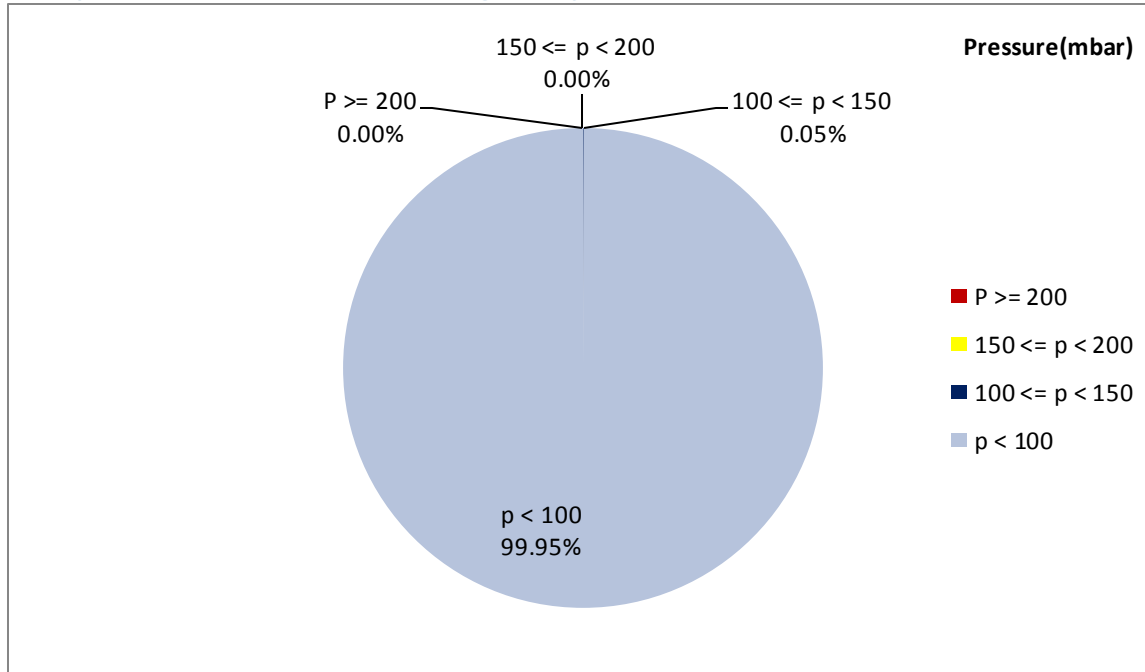


Figure 1- Pressure distribution over the working hours

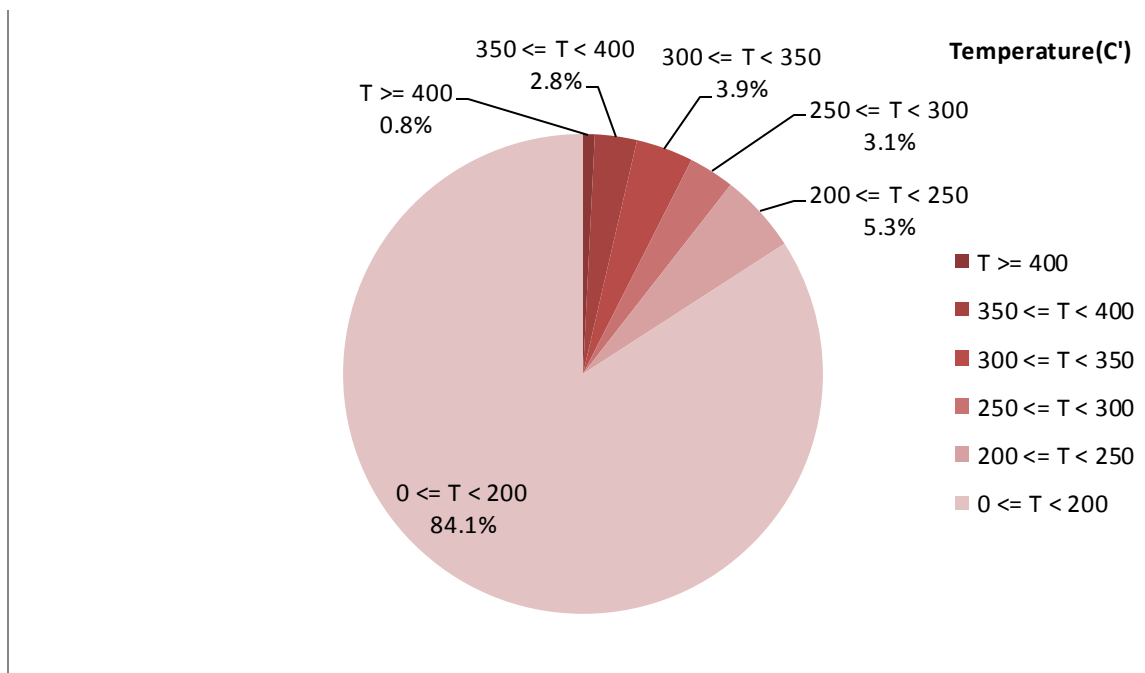


Figure 2-Temperature distribution over the working hours

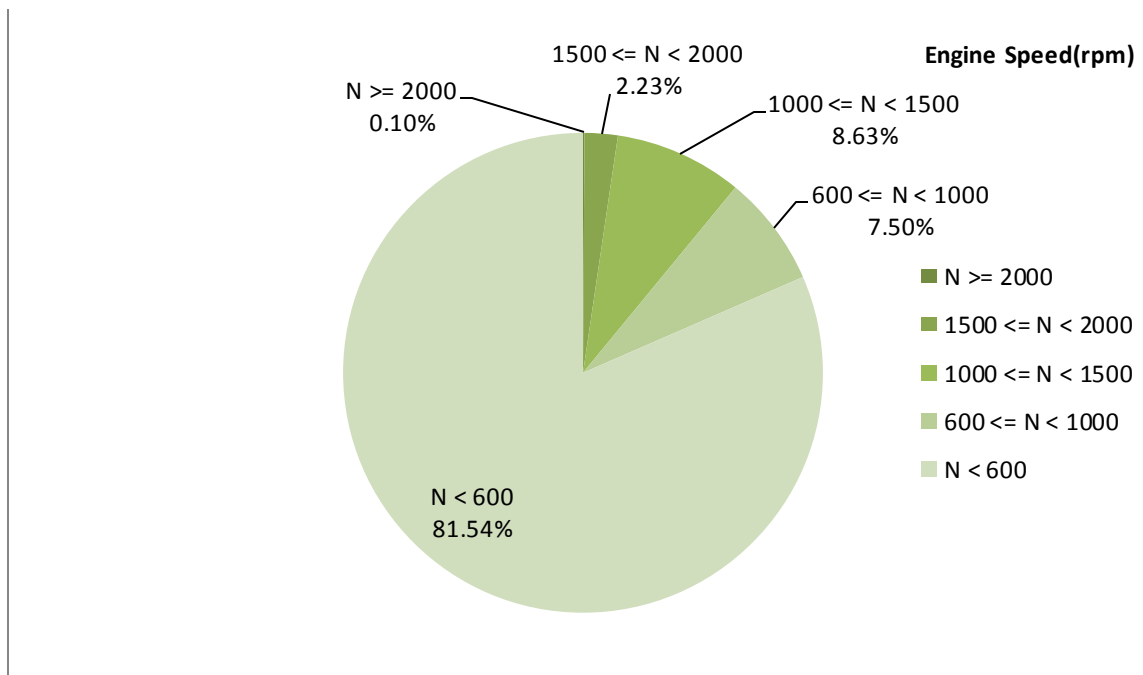


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
153.24	3.17	657

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
241.97	14.89	1104

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
454-50	114-0	2224-272

## Detailed Pressure Analysis

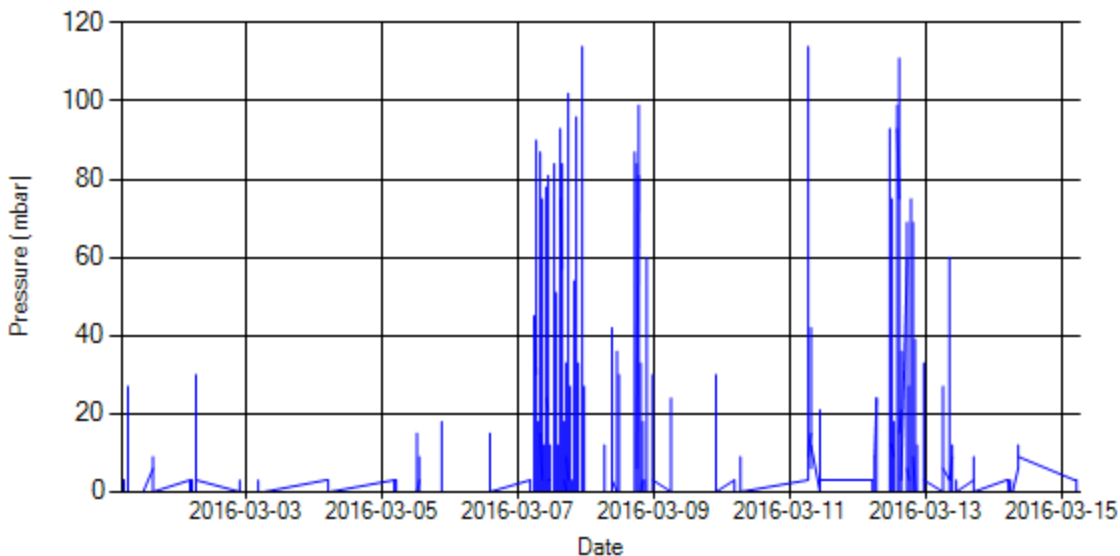


Figure 4- Pressure distribution over the period

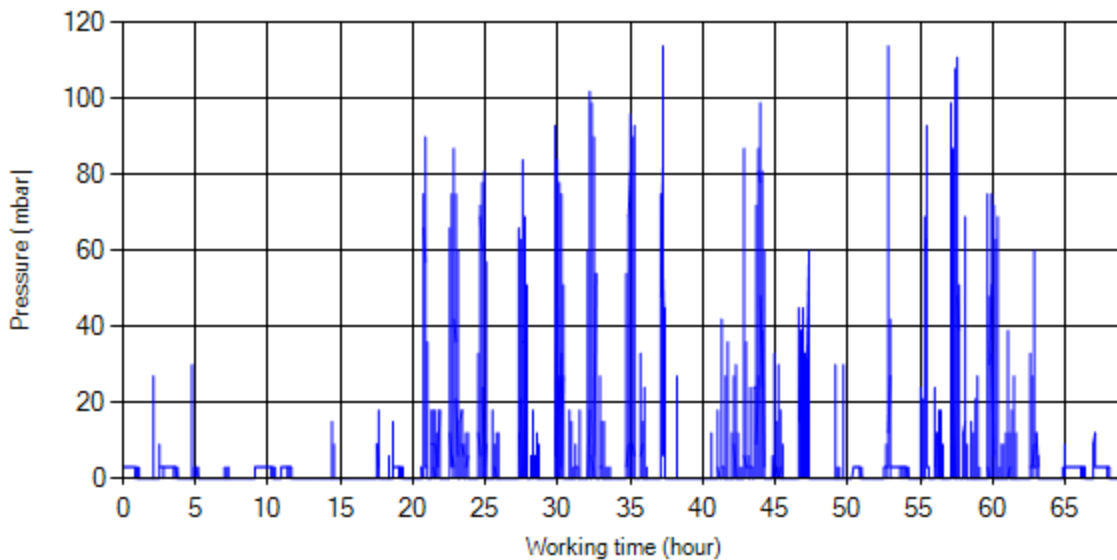


Figure 5- Pressure vs. working hours

Notice: backpressure distribution was shown into two diagrams. As obvious in figure 5, stop-working periods were eliminated and pressure was displayed along working hours.

## Detailed Temperature Analysis

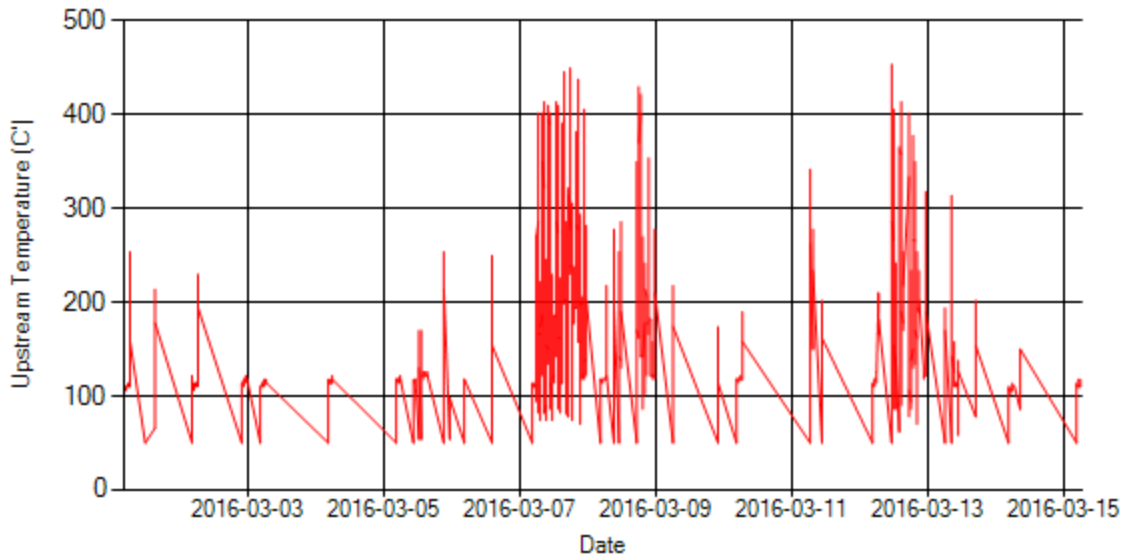


Figure 6- Temperature distribution over the period

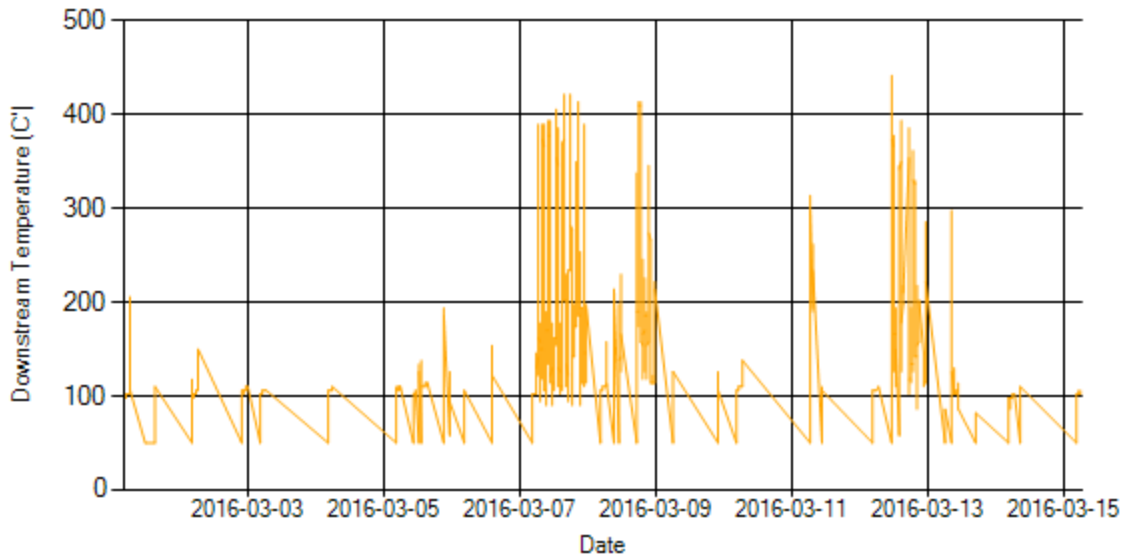


Figure 7- Temperature distribution over the period

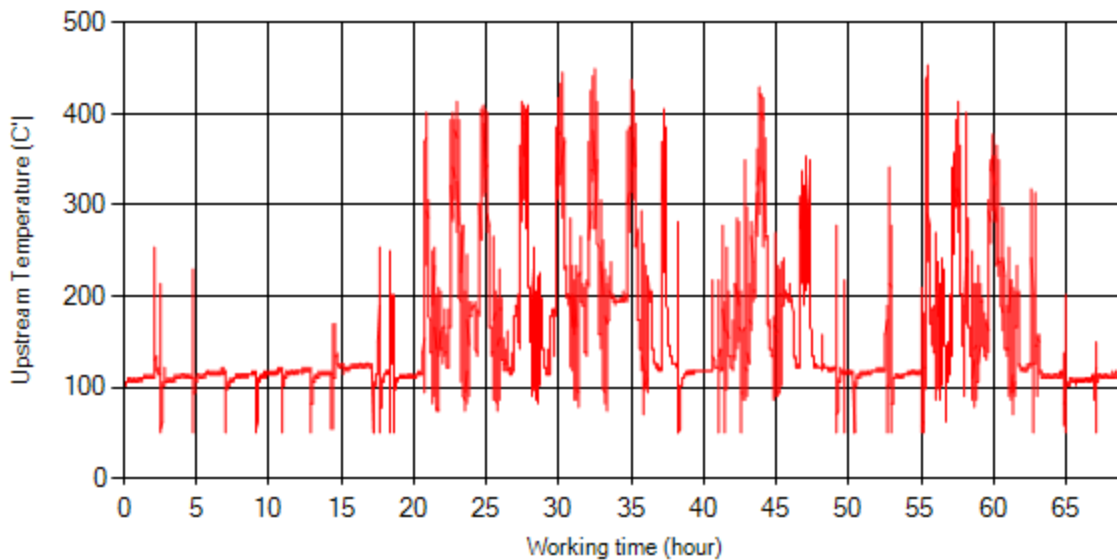


Figure 8- Temperature vs. working hours

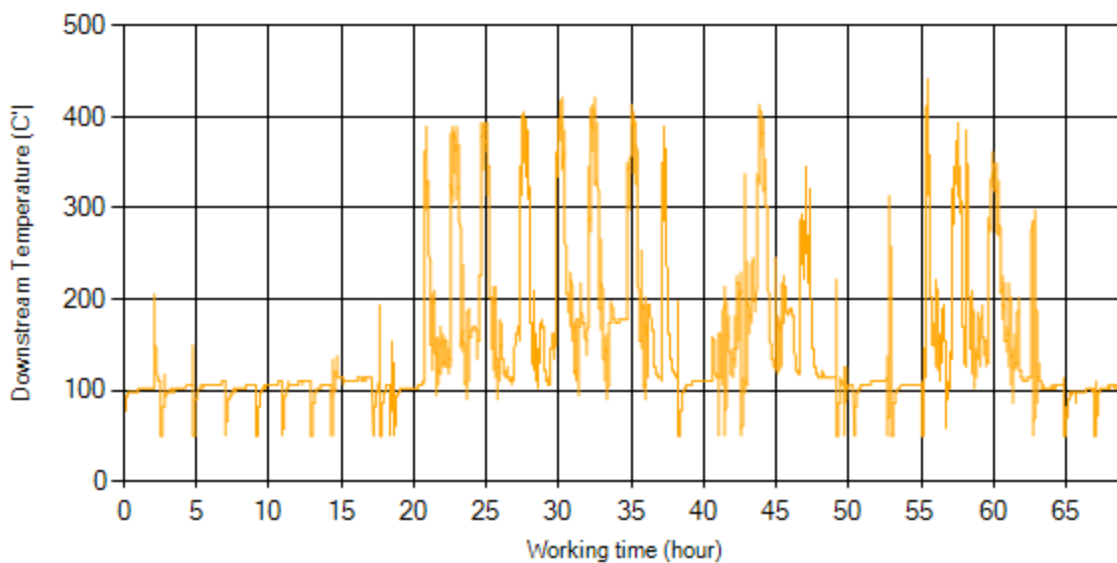


Figure 9- Temperature vs. working hours

## Engine Speed Diagrams

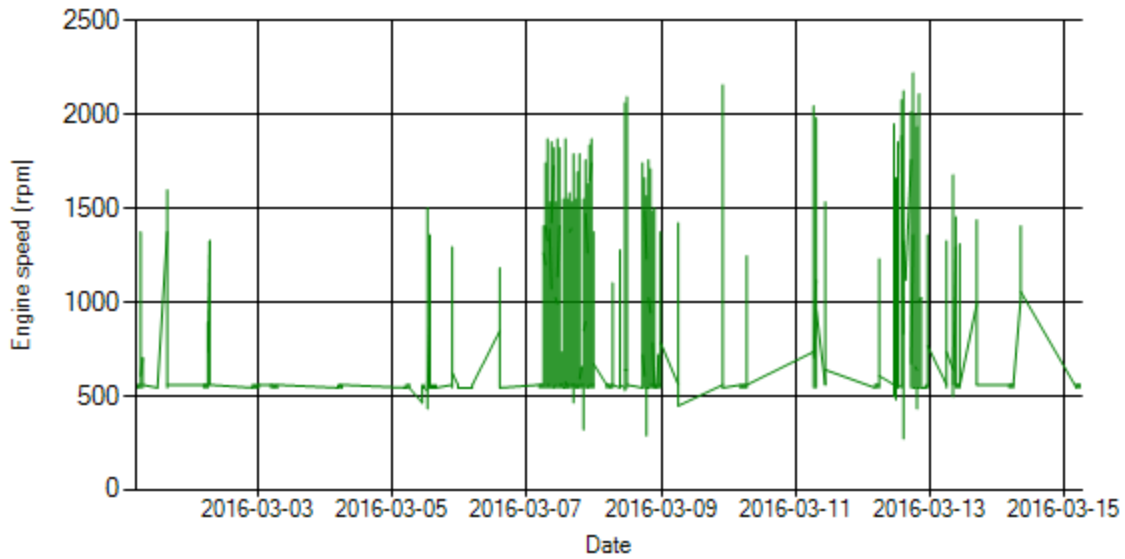


Figure 10- Engine speed distribution over the period

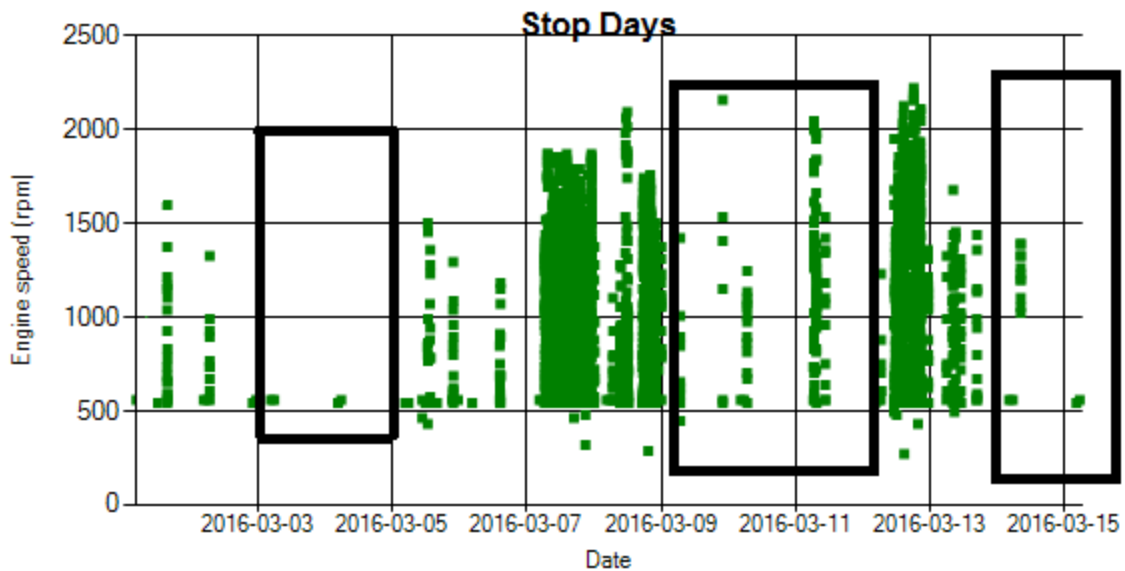


Figure 11- Engine speed diagram for calculating CPK's working days



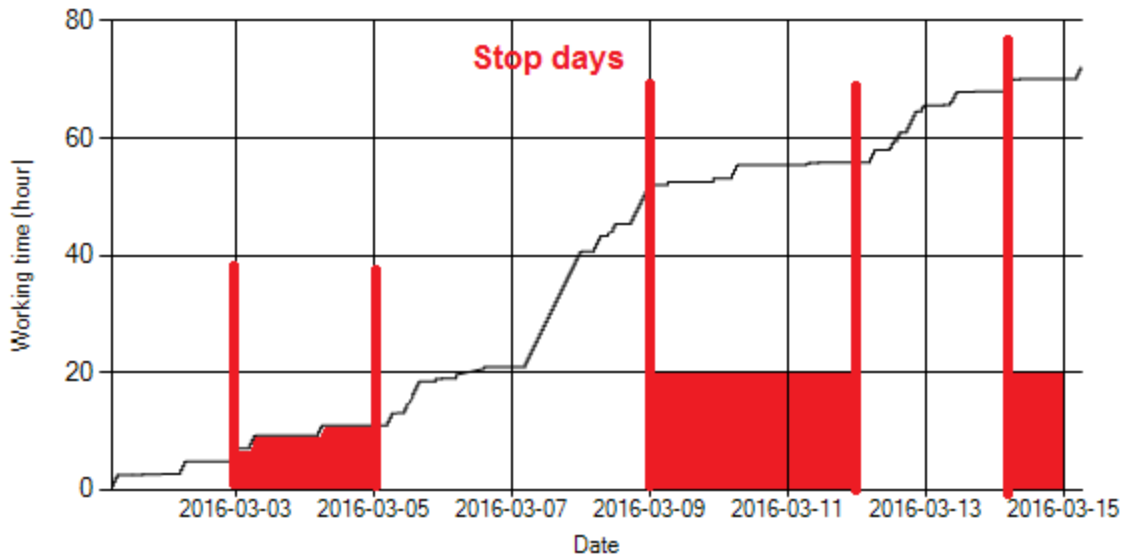


Figure 12- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 12. The lines parallel with Date axis show days without data logger data. As depicted in Figure 12, bus was stationary for 7 days during this period.

### Pressure-Engine Speed diagrams

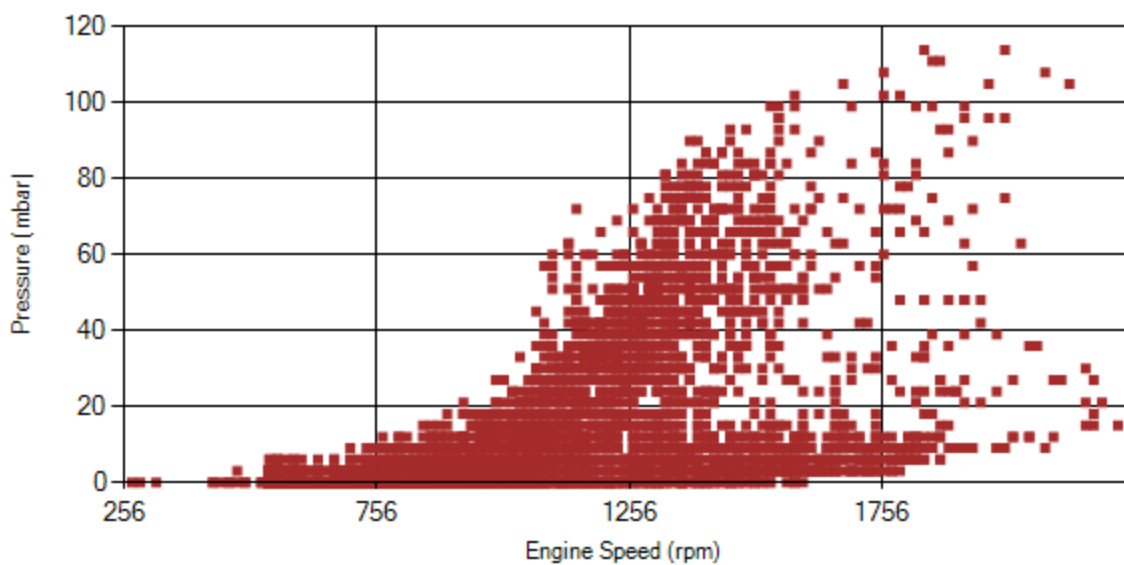


Figure 13- Pressure against engine speed

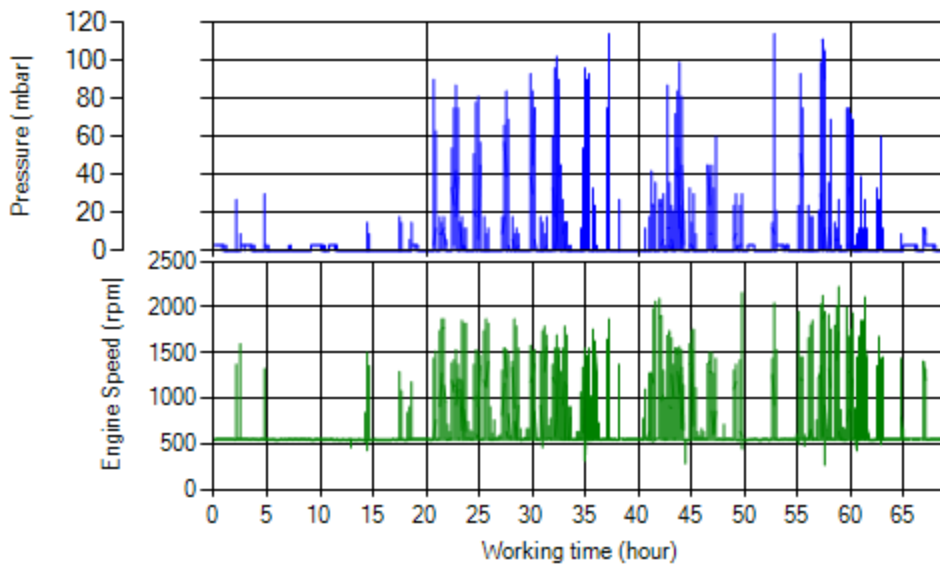


Figure 14- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

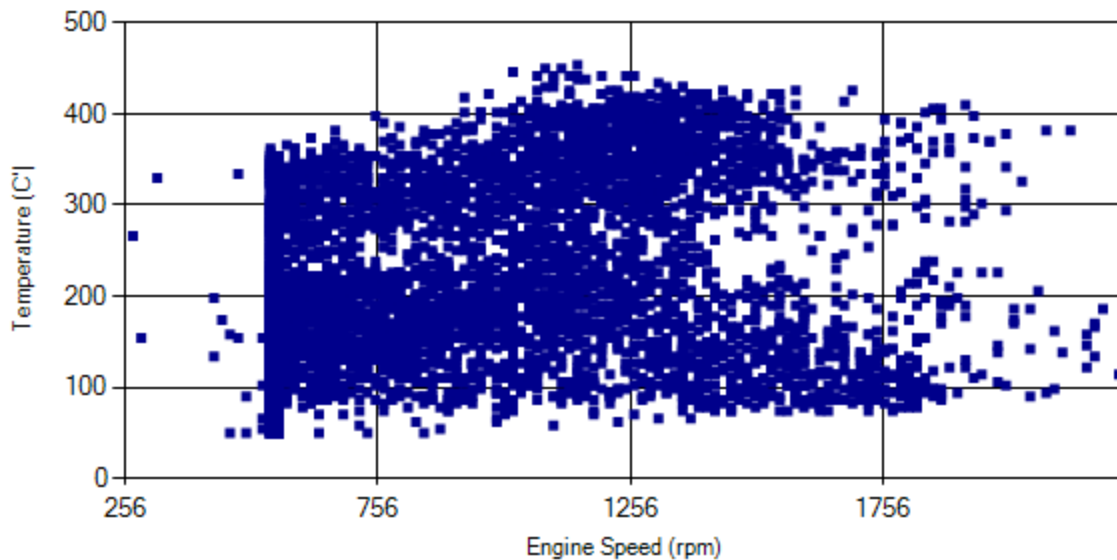


Figure 15- Temperature against engine speed

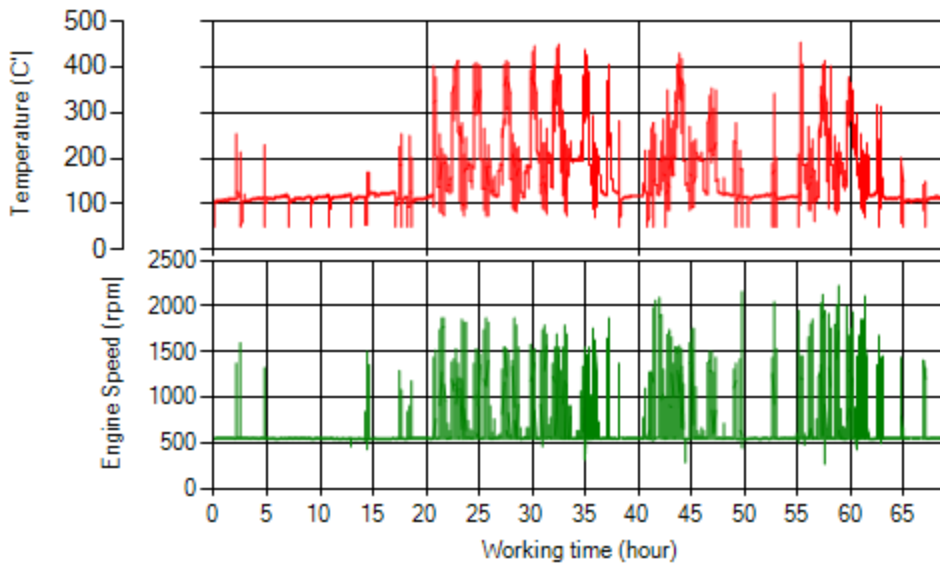


Figure 16- T, N distribution vs. working hours

### Filter Operation Analysis

- As depicted in figure 1, only 0.05% of working time pressure was above 100 mbar during this period.
- Figure 2 display flow temperature distribution for DPF’s upstream. It can be obviously observed that 3.6% of total working-time temperature is above 350 °C and 10.6% above 250°C. This low temperature distribution was because of high idle ratio (81%).

Filter operation status	Excellent <input checked="" type="checkbox"/>	Good <input type="checkbox"/>
	Maintenance required <input type="checkbox"/>	Failed <input type="checkbox"/>